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Via Electronic Mail and UPS

October 31, 2016

David Turin
U.S. Environmental Protection Agency
5 Post Office Square – Suite 100
Mail Code: OES04-3
Boston, MA 02109-3912

Re: Hull WWTF Capacity, Management, Operation and Maintenance ("CMOM") Program Assessment
Town of Hull, MA Administrative Order on Consent, Docket No. CWA-01-AO-16-09

Dear Mr. Turin:

As identified in the Administrative Order on Consent (AOC), Woodard & Curran, on behalf of the Town of Hull is hereby submitting the CMOM Program Self-Assessment Checklist for your review, comment and/or approval. Woodard & Curran began operation and maintenance of the Hull Wastewater Treatment Facility (WWTF) on April 1, 2015.

Sincerely,

WOODARD & CURRAN

Frank J. Cavaleri
Senior Principal

FJC/klr

Enclosures: CMOM Program Self-Assessment Checklist

cc: David Burns, MassDEP Southeast Regional Office
Philip Lemnios, Manager, Town of Hull Town
James Dow, Director, Town of Hall Department of Public Works
Carol O'Connor, Town of Hull Sewer Department
Kate Roosa, W&C
Aram Varjabedian, W&C

PN: 217319

Attachment
United States Environmental Protection Agency, EPA New England

Wastewater Collection System CMOM Program Self-Assessment Checklist Oct 2010

Name of your system _____**Hull Water Pollution Control Facility**_____ **Date** __**October 31, 2016**____

Put an "A" in the final column for an issue you intend to address with future action, or leave blank if you have evaluated your program as sufficient.

I. General Information – Collection System Description

I	Question	Response	*Act
1	How many people are served by your wastewater collection system?	According to the 2010 U.S. Census report, the Town of Hull has 10,293 people served and in Hingham and Cohasset, approximately 936 people are served. Peddocks Island, part of the Boston Harbor Islands State Park, also discharges small flow to the Hull Sewer System (<100 users). Combined there is a total service population of about 11,330.	
2	What is the number of service connections to your collection system? How many: Manholes? Pump stations? Feet (or miles) of sewer? Force mains? Siphons?	Hull has 4,809 service connections (including 4,497 from Hull and 312 from Hingham and Cohasset). There are approximately 2,040 manholes and 210,000 linear feet (40 miles) of gravity sewer (ranging in diameter from 4" to 36"). About 20,000 feet of low pressure sewer serves 175 homes with Town owned grinder pumps, with approximately an additional 25 resident owned grinder pumps. Seven pumping stations ranging in size from 150 gpm to 1,700 gpm with a total length of force mains of approximately 14,000 feet (See Table below for summary of each station). A four-barrel siphon consisting of 1-10", 2-16", and 1-18", 60 feet long was constructed along the interceptor to allow for placement of a 48" drainage culvert under the 36" interceptor.	

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Name	Location	Generator	Design Capacity (gpm)	Approx. Age (years)	Forcemain Size/Length
L.S. A	Valley Beach Rd.	No*	200	20	4"/840 ft.
P.S. 1	Atlantic Ave.	Yes	450	35	8"/2,050 ft.
P.S. 3	George Washington Blvd.	Yes	1700	35	14"/4,625 ft.
P.S. 4	Marginal Rd.	Yes	800	35	8"/1,000 ft.
P.S. 5	Draper Ave.	Yes	1600	35	14"/530 ft.
P.S. 6	L St. Playground	Yes	670	22	6"/60 ft.
P.S. 9	Main St. High School	Yes	650	35	10"/5,030 ft.
*Transfer Switch, portable generator connection and portable generator are available.					

3	What is the age of your system (e.g., 30% over 30 years, 20% over 50 years, etc.)?	Significant portions of the collection system date back to the turn of the century. The system is a "separate" sanitary sewerage system, but some sewers are documented back to the 1860's. Over 50% of the collection system has been constructed since 1977, making the average age of the collection system over 40+ years old.	
4	What type(s) of collection system map is/are available and what percent of the system is mapped by each method (e.g., paper only, paper scanned into electronic, digitized, interactive GIS, etc.)? When was the map(s) last updated?	A digitized interactive sewer system GIS database and map was created by scanning and digitizing paper plans covering about 85 to 90% of the town's sewers, forcemains and pump stations. The GIS map/database was mostly based on the 1986 CDM sewer system map/plan. GIS mapping and attribute data is being updated and supplemented on an annual basis during the Town's annual system pipeline and manhole inspections using a GPS unit and smartphone/tablets. The base GIS map has yet to incorporate the recent data gathered in 2015 and 2016, but it is expected that through the Town's annual updates, it will develop a complete, accurate sewer system GIS database and map.	**A**
5	If you have a systematic numbering and identification method/system established to identify sewer system manhole, sewer lines, and other items (pump stations, etc.), please describe.	Yes. According to the Kleinfelder GIS mapping system, manholes, sewer lines, forcemain and pump stations are identified. The GIS map is online and available in the field; field data is gathered with the goal of updating the GIS map on an ongoing basis.	**A**
6	Are "as-built" plans (record drawings) or maps available and used by field crews in the office and in the field?	Hull has "tie-in cards" for approximately 3,240 of the 4497 Hull connections. For gravity sewer lines, forcemains and pump stations, there are GIS locations, available through an online GIS web mapping profile created by Kleinfelder. There are paper drawings for many sewer projects available at the wastewater facility, and these are utilized or referenced by field crews on as needed basis.	**A**
7	Describe the type of asset management (AM) system you use (e.g. card catalog, spreadsheets, AM software program, etc.)	The current asset management system utilizes several technology tools; including DoForms, SEMS Technologies CMMS, and the GIS system combined with Excel spreadsheets (inventories, calculations).	**A**

II. Continuing Sewer Assessment Plan

II	Question	Response	*Act
1	Under what conditions, if any, does the collection system overflow? Does it overflow during wet and/or dry weather? Has your system had problems with: □ hydraulic issues, □ debris, □ roots, □ Fats, Oils & Grease (FOG), □ vandalism blockages resulting in manhole overflows, □ basement backups, □ other (specify)? Describe your system's history of structural collapses, and PS or force main failures.	Collection system overflows occur mostly during wet weather events, and the system does not typically experience overflows during dry weather. The collection system has had some problems with structural sewer line and manhole failures, as well as forcemain failures, in addition to backups caused by debris, FOG, and basement backups. However, ***the hydraulic limitations in the collection system and the WWTP are a concern only during extreme flow events or infrastructure failures.*** **Pump Station losses** - there have been no pump station losses that have caused sewer overflows in the past couple of years, except for the forcemain issues discussed below.	

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		Structural collapses – some corrosion/deterioration of sewers and manholes have occurred in the past causing structural defects that needed to be repaired. **Forcemain failures** – The forcemain for PS 9 corroded and was replaced in 2011 with a new HDPE Forcemain. The forcemain for PS 4 had a break and required repair in early 2014. This forcemain has failed multiple times over the years. 15 feet of the end of the forcemain for PS 3 was lined in the summer of 2016 due to corrosion issues. The manhole and reinforced concrete pipe ("main interceptor") where the forcemain for PS 3 discharges, collapsed in 2002/2003 and required an emergency repair.	
2	How many SSOs have occurred in each of the last three calendar years? What is the most frequent cause?	During the last three years, there have been 29 SSOs (15 in 2013, 5 in 2014 and 9 in 2015). The most frequent cause is mechanical failure, blockages and secondary sludge spills.	
3	Of those SSOs, how many basement backups occurred in each of the last three calendar years? How are they documented?	During the last three years (2013, 2014 and 2015), there has been one documented basement backup. It was documented as an SSO, according to plant records, which are typically documented through daily reports and annual monthly reports.	
4	What is the ratio of peak wet-weather flow to average dry-weather flow at the wastewater treatment plant (or municipal boundary for satellite collection systems)?	The ratio of peak wet weather flow to average dry weather flow is approximately 4.5. For rare, extreme events, ratios as high as 8 (or more) have been observed. The average flow at the plant is 1.7 MGD.	
5	What short-term measures have been implemented or plan to be implemented to mitigate the overflows? If actions are planned, when will they be implemented?	Short term measures that have been implemented include improving the sludge transfer process, prioritizing repairs based on work order comment conditions to reduce mechanical failures, SSO logging improvements, utilization of backup bypass pump systems, and improved photo/follow-up work order documentation through use of tablets and SEMS system.	**A**
6	What long-term measures have been implemented or plan to be implemented to mitigate the overflows? If actions are planned, when will they be implemented?	Long term measures that are in planning include utilizing portable backup pumps as well as permanent backup pumps and improving the general O&M and asset management procedures for the collection system. Long term measures will be discussed further in the CMOM Corrective Action Plan.	**A**
7	Describe your preventive maintenance program; how do you track it (e.g., card files, electronically, with specific software)?	The preventative maintenance software program SEMS incorporates work orders generated by plant staff from identification of a task, through work progress to completion and reminders. Preventative maintenance work orders are scheduled on a regular basis, and can be assigned to specific operators for completion. Then, the records can by linked to monthly and annual reports.	
8	How do you prioritize investigations, repairs and rehabilitation? What critical and priority problem areas are addressed more frequently than the remainder of	The Town inspected and assessed its Reinforced Concrete Pipe (RCP) sewer "***main interceptor***" pipeline and manholes in 2004 and 2009. From these assessments, Kleinfelder engineers recommended renewal of	**A**

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	your system? How frequently are these areas evaluated?	approximately 12,300 liner feet of interceptor pipeline based on interceptor segments with PACP structural ratings equal to or greater than 4. The poor structural condition was a result of hydrogen sulfide induced corrosion to the internal pipe wall. The recommended renewal project was executed through two construction contracts in 2005 and 2010 with an associated cost of $2.13 Million (in 2005/2010 dollars). The reported cost included construction and engineering, but not the cost of performing the assessments. The two contracts consisted of cured-in place pipelining (CIPP) of approximately 55% of the sewer interceptor, which ranged between 14 and 36 inches in diameter; as well as renewal of 15% of the interceptor manholes. There have been preliminary evaluations since Woodard & Curran has taken over the Operations and Maintenance of the WWTF in May of 2015, such as evaluating major assets and risk assessment of major forcemain sections. However, a formal strategy and plan of assessment needs to be addressed. The current operations contract with W&C provides some guidance and quotas for performing routine inspection and cleaning of the collection system, including recommended annual quotas for sewer CCTV, sewer cleaning, manhole inspections, grinder pump replacement and wet well cleaning. These inspection and cleaning quotas will be reevaluated and reprioritized as part of the CMOM Corrective Action Plan.	
9	Are septage haulers required to declare the origin of their "load"? Are records of these declarations maintained? Do any of the declarations provide evidence of SSOs?	No septage is accepted at this time. Landfill leachate from a Cohasset construction material landfill, that was historically trucked to the site for treatment, ceased prior to May of 2015.	

III.A. Collection System Management Organizational Structure

IIIA	Question	Response	*Act
1	Do you have an organizational chart that shows the overall personnel structure for collection system operations, including operation and maintenance staff? Please attach your chart.	Yes. Woodard & Curran has an organizational chart (attached) which outlines the Town and Contract Operator staffing plan and the relationship between the organizations.	
2	For which jobs do you have up-to-date job descriptions that delineate responsibilities and authority for each position?	All of the Woodard & Curran positions have updated job descriptions and authority requirements.	
3	How many staff members are dedicated to collection system maintenance? Of those, how many are responsible for any other duties,	The Contract Operator has a staff of 6 full time, plus technical support staff, to oversee the wastewater system, both collections and treatment facility operation and maintenance. There are 2 summer interns and other part-	

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	(e.g., road repair or maintenance, O&M of the storm water collection system)? If so, describe other duties.	time support staff as well. The W&C staff also oversee the operation of the D Street storm water pump station.	
4	Are there any collection system maintenance position vacancies? How long has the position(s) been vacant?	There are no vacancies at this time.	
5	For which, if any, maintenance activities do you use an outside contractor?	Outside contractors are used for: - Sewer Jetting - Sewer Cleaning - CCTV - Repairs - Wet Well cleaning	
6	Describe any group purchase contracts you participate in.	The Contract Operator participates in several group purchase contracts, such as USA Bluebook, Wind River and Waterline Industries.	

III.B. Collection System Management: Training

IIIB	Question	Response	*Act
1	What types of training are provided to staff?	Safety and technical training are provided to staff regularly in accordance with Contract Operation requirements and MA DEP Operator Certification requirements. Both in-house specialty training and external resources are utilized.	
2	Is training provided in the following areas: general safety, routine line maintenance, confined space entry, MSDS, lockout/tagout, biologic hazards, traffic control, record keeping, electrical and instrumentation, pipe repair, public relations, SSO/emergency response, pump station operations and maintenance, trench/shoring, other (describe)?	Yes. On a monthly basis, staff are required to participate in a safety meeting PureSafety training. Safety training topics include: - Hazard Communication (safety data sheets) - Biologic Hazards - Defensive Driving - Lockout/tagout - Fall Protection - Ergonomics Annual (or as needed) in-plant training is provided for the following items: - General Safety - Pump Station Operations and Maintenance - SSO/Emergency Response/EAP - Routine line maintenance - Confined space entry - Electrical and instrumentation	
3	Which training requirements are mandatory for key employees?	All monthly training items listed above are mandatory for key employees. Additional programs such as forklift training or Qualified Electrical Workers are required for employees who utilize those pieces of equipment.	
4	How many collection system employees are certified (e.g, NEWEA certification program) and at what grade are they certified?	The Contract Operator Project Manager has a NEWEA Grade 3 Collections System certification. All O&M Staff have the appropriate Mass DEP Wastewater Certifications, and some of the staff have National Association of Sewer System Cleaning Operators (NASSCO) Pipeline Assessment and Certification Program (PACP) certification. One current on-site staff, one technical support staff and the Town of Hull DPW Director are NASSCO/PACP certified.	

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		Collections system subcontractors who preform inspections are NASSCO/PACP certified.	

III.C. Collection System Management: Communication and Customer Service

IIIC	Question	Response	*Act
1	Describe your public education/outreach programs (e.g., for user rates, FOG, extraneous flow, SSOs etc.)	The Sewer Department mails "Down the Drain" newsletters biannually to rate payers with information ranging from introduction to plant activities to emergency management of grinder pumps. The Town also utilizes a webpage for Sewer Department information. We also provide facility tours, when requested, for school children, interns, etc.	
2	What are the most common collection system complaints? How many complaints have you received in each of the past three calendar years?	The most common complaints include sewer blockage/backup issues and odor complaints.	
3	Are formal procedures in place to evaluate and respond to complaints?	Hull Sewer Department Office receives calls for sewer related complaints and passes them on to the Contract Operator to respond, per Contract Requirements.	
4	How are complaint records maintained (i.e., computerized)? How are complaints tied to emergency response and operations and maintenance programs?	Complaint records are maintained through work orders generated in SEMS. When a call is received from the Sewer Department, the WWTF is asked to respond or address the complaint as determined by the Sewer Dept. office.	**A**

III.D. Collection System Management: Management Information Systems

IIID	Question	Response	*Act
1	How do you manage collection system information? (Commercial software package, spreadsheets, data bases, SCADA, etc). What information and functions are managed electronically?	Collection system information is managed by several database systems including SCADA, CMMS (SEMS Technologies coupled with DoForms) and Hach WIMS. SCADA provides real time information associated with the pump stations and stores the data for basic trending. Hach WIMS and the CMMS are used to manage the daily inspection data and maintenance activities for the entire wastewater system.	**A**
2	What procedures are used to track and plan collection system maintenance activities?	The CMMS system (SEMS Technologies and DoForms) is used to manage and document scheduled, non-scheduled and other maintenance activities (Corrective, Emergency Repair etc.).	
3	Who is responsible for establishing maintenance priorities? What records are maintained for each piece of mechanical equipment within the collection system?	The W&C Operations contract sets basic inspection and cleaning quotas for the collection system. These quotas were developed over 10 years ago and will be updated during the CMOM Corrective Action Plan. For pump stations, there is a wet well cleaning and inspection schedule set by the Contract Operator, which is fulfilled, logged and reported through the SEMS Work Order System. Grinder Pump inspections or maintenance history is maintained by the Town Sewer Department and the Contract Operator. If there are potential issues with the grinder pumps, the Sewer Department receives the call and	**A**

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		processes a Work Order request through the Contract Operator.	
4	What is the backlog for various types of work orders?	As of October 22, 2016, there are currently 319 backlogged work orders. 25% Collection System 75% Wastewater Treatment Plant	
5	How do you track emergencies and your response to emergencies? How do you link emergency responses to your maintenance activities?	Emergencies are typically processed as an emergency or high priority work order, classified by type. For example, if a blockage is reported at an address, then the inspection of the sewer line and manholes upstream and downstream are documented using a high-priority Manhole Inspection form and any subsequent high-priority work orders. There are separate emergency documentation procedures for SSO's, Grinder Pumps and Safety items. Follow up repairs and inspections are scheduled using Work Order reference number in SEMS database. All forms are completed electronically.	
6	What written policies/protocols do you have for managing and tracking the following information: complaint work orders, scheduled work orders, customer service, scheduled preventative maintenance, scheduled inspections, sewer system inventory, safety incidents, emergency responses, scheduled monitoring/sampling, compliance/overflow tracking, equipment/tools tracking, parts inventory?	The WWTF electronically tracks the following items using DoForms and SEMS: - Complaints - Scheduled Service - Customer Service - Scheduled Preventative Maintenance - Scheduled Inspections - Safety Incidents - Emergency Response - Compliance/Overflow Tracking The Contract Operator is in the process of updating the WWTF O&M Manual which will include an updated equipment and parts inventory tracking procedure.	A

III.E. Collection System Management: SSO Notification Program

IIIE	Question	Response	*Act
1	What are your procedures, including time frames, for notifying state agencies, health agencies, regulatory authorities, and the drinking water authorities of overflow events?	See response to item 2 below.	
2	Do you use the state standard form for recording/reporting overflow events? If not, provide a sample copy of the form that is used.	We use the MA DEP standard form for recording/reporting overflow events. Please refer to the ERP dated 8/26/2016 for specifics.	

III.F. Collection System Management: Legal Authority

IIIF	Question	Response	*Act
1	Are discharges to the sewer regulated by a sewer use ordinance (SUO)? Does the SUO contain procedures for controlling and enforcing the following: □ FOG;	Yes. The Town of Hull Permanent Sewer Commission adopted the Sewer Use Ordinance in its current form 10/26/1987. The SUO includes procedures for controlling: - FOG - Building Structures over Sewer Lines	A

* Put an "A" in the final column if this is an issue you intend to address with future action.

	□ Infiltration/ Inflow (I/I); □ building structures over the sewer lines; □ storm water connections to sanitary lines; □ defects in service laterals located on private property; □ sump pumps?	- Stormwater Connections - Service Lateral Defects - Sump Pumps - Grinder Pumps - Illegal Connections	
2	Who is responsible for enforcing various aspects of the SUO? Does this party communicate with your department on a regular basis?	Enforcement of the SUO falls onto the Town of Hull, Chief Facility Manager (or designee) who communicates with the Contract Operator on a regular basis.	
3	Summarize any SUO enforcement actions/activities that have occurred in the last three calendar years.	Currently inspections to identify sump pumps is covered by the Town bylaw that when a property is transferring ownership, that an inspection is done. Approximately 150 sump pump inspections are performed per year. We have only found a handful of ones that needed to be corrected – approximately 7 or 8.	**A**
4	Do you have a program to control FOG entering the collection system? If so, which of the following does it include: □ permits, □ inspection □ enforcement? Are commercial grease traps inspected regularly and who is responsible for conducting inspections?	There is a policy in place about installing grease traps. There is currently not an inspection program.	**A**
5	Is there an ordinance dealing with storm water connections or requirements to remove storm water connections?	§149-17 of Hull SUO prohibits stormwater and all other unpolluted drainage from being discharged to sanitary sewers.	
6	Does the collection system receive flow from satellite communities? Which communities? How are flows from these satellite communities regulated? Are satellite flow capacity issues periodically reviewed?	Yes, there is an Inter-Municipal Agreement (IMA) with Cohasset and Hingham for customer tie in to existing services. For the IMAs, bills are based on water meter readings as provided from the Towns – the flows could be compared to the units billed.	
7	Does the collection system receive flow from private collection systems? If yes, how is flow from these private sources regulated? How are overflows dealt with? Provide details, including contact information for these private systems.	The collection system receives flows from private grinder pumps. For any problems brought to the attention of the Sewer Dept. related to these privately owned grinder pumps, the owners are directed to contact the local vendor, FR Mahoney.	

IV.A. Collection System Operation: Financing

IV A	Question	Response	*Act
1	Has an enterprise (or other) fund been established and what does it include: wastewater collection and treatment operations; collection system maintenance; long-term infrastructure improvements; etc.?	A sewer enterprise fund has been established and it includes wastewater collection and treatment operations – collection system maintenance and debt payment for infrastructure improvements. A$140K capital budget is included the contracted operations and the Sewer Department budget includes an additional $200K. The Enterprise fund includes	A

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	Are the funds sufficient to properly fund future system needs?	costs of administration and of items such as insurance and payments to the general fund for health insurance, pension, support for accounting, legal, treasurer/collector etc. There is a WWTF Capital Assessment underway, which will include collection system needs, to be presented to the Permanent Sewer Commission for attention.	

2	How are rates calculated (have you done a rate analysis)? What is the current sewer charge rate? When was it last increased? How much was the increase?	Rates are calculated by taking the total budgeted costs divided by the total number of 100 cubic foot units billed. Hull rates are then offset by rehabilitation fees, permits, and free cash balances. The current rate is $11.34 and the Hull subsidized rate is $9.42. This rate went into effect on billing starting 1/1/15-12/31/15 and received during fiscal year 2016. The percent increase was 42%. This increase was necessary as the debt to repair the plant from the failure came on line and the new 10-year contract with the plant operator resulted in increased costs.	
3	What is your O&M budget?	The O&M budget is $3,026,000, not including debt service.	
4	If an enterprise fund has not been established, how are collection system maintenance operations funded?	N/A	
5	Does a Capital Improvement Plan (CIP) that provides for system repair/replacement on a prioritized basis exist? What is the collection system's average annual CIP budget?	We are currently doing an assessment of the plant and the collection system needs to develop a prioritized CIP. Implementation will be part of the CMOM Corrective Action Plan. Overall budget spent from 2005 to 2015 was an average of $386,000 per year for collection system work.	A
6	How do you account for the value of your system infrastructure for the Government Accounting Standards Board standard 34 (GASB 34)?	GASB 34 – annually major assets purchased during the fiscal year are provided to the accounting office. Straight line Depreciation is applied to the assets.	

IV.B. Collection System Operation: Hydrogen Sulfide Monitoring and Control

IV B	Question	Response	*Act
1	Are odors a frequent source of complaints? How many have been received in the last calendar year?	Odors are a frequent source of complaint as there are several immediate neighbors surrounding the WWTF. 33 complaints occurred during the last calendar year, with more than half occurring between May and August.	
2	Do you have a hydrogen sulfide problem, and if so, do you have corrosion control programs? What are the major elements of the program?	Hull has extreme hydrogen sulfide problems and related corrosion. This past summer we used (seasonal) ferric chloride addition in the collection system, installed wet well aerators and we are adding IN-PIPE bacteria to 20 locations within the collection system to reduce FOG and sulfides.	**A**
3	Does your system contain air relief valves at the high points of the force main system? How often are they	The collection system does not contain air relief valves at forcemain highpoints on any of the 7 main pump stations.	**A**

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	inspected? How often are they exercised?	The grinder pump pressure lines need to be evaluated and inspected to determine the existence and condition of any air/vac relief valves.	

IV.C. Collection System Operation: Safety

IV C	Question	Response	*Act
1	Do you have a formal Safety Training Program? How do you maintain safety training records?	Yes. The Contract Operator has a formal safety program which outlines training, awareness and protection equipment for all staff and contractors. Safety records are maintained through specific location logs	
2	Which of the following equipment items are available and in adequate supply: □ rubber/disposable gloves; □ confined space ventilation equipment; □ hard hats, □ safety glasses, □ rubber boots; □ antibacterial soap and first aid kit; □ tripods or non-entry rescue equipment; □ fire extinguishers; □ equipment to enter manholes; □ portable crane/hoist; □ atmospheric testing equipment and gas detectors; □ oxygen sensors; □ H2S monitors; □ full body harness; □ protective clothing; □ traffic/public access control equipment; □ 5-minute escape breathing devices; □ life preservers for lagoons; □ safety buoy at activated sludge plants; □ fiberglass or wooden ladders for electrical work; □ respirators and/or self-contained breathing apparatus; □ methane gas or OVA analyzer; □ LEL metering?	□ rubber/disposable gloves; - YES □ confined space ventilation equipment; - YES □ hard hats, - YES □ safety glasses, - YES □ rubber boots; - YES □ antibacterial soap and first aid kit; - YES □ tripods or non-entry rescue equipment; - YES □ fire extinguishers; - YES □ equipment to enter manholes; - YES □ portable crane/hoist; - YES □ atmospheric testing equipment and gas detectors; - YES □ oxygen sensors; - YES □ H2S monitors; - YES □ full body harness; - YES □ protective clothing; - YES □ traffic/public access control equipment; - YES □ 5-minute escape breathing devices; - N/A □ life preservers for lagoons; - N/A □ safety buoy at activated sludge plants; - YES □ fiberglass or wooden ladders for electrical work; - YES □ respirators and/or self-contained breathing apparatus; - N/A □ methane gas or OVA analyzer; - YES □ LEL metering -YES	

IV.D. Collection System Operation: Emergency Preparedness and Response

IV D	Question	Response	*Act
1	Do you have a written collection system emergency response plan? When was the plan last updated? What departments are included in your emergency planning?	Yes, the Contract Operator developed a written Emergency Response Plan (ERP) in August 2016. Town Sewer Department, Town Manager, and Town Emergency Response Committee were coordinated with as a part of the plan.	
2	Which of the following issues are considered:	Within the Emergency Response Plan, all of the following issues are considered:	

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	□ vulnerable points in the system, □ severe natural events, □ failure of critical system components, □ vandalism or other third party events (specify), □ other types of incidents (specify)?	- Vulnerable points in the system (critical pump stations to address immediately, low points in the collection system) - Storm Events and Predicted High Flow Scenarios - Backup Systems Initiation due to pump failure/generator use - SSO's - Internet/Electrical Outages - Town of Hull Emergency Notification Procedures	
3	How do you train staff to respond to emergency situations? Where are responsibilities detailed for personnel who respond to emergencies?	Staff is trained by holding Mock Storm Drills, as part of the mock drills we update ERP plan and review with staff. ERP defines responsibilities.	
4	How many emergency calls have you had in the past calendar year?	There have been 2 Emergency Calls in the past calendar year.	

IV.E. Collection System Operation: Engineering – Capacity

IV E	Question	Response	*Act
1	How do you evaluate the capacity of your system and what capacity issues have you identified, if any? What is your plan to remedy the identified capacity issues?	Capacity was evaluated previously in 1977, 1984 and 1998 the plant has adequate capacity for normal flow, but not for extreme flow events, such as the "No-Name" storm of 1991. Several requests have been submitted in the past to allow for by-passing of extreme flows beyond the capacity of the sewer system; this currently occurs using portable emergency pumps on an as needed basis.	A
2	What procedures do you use to determine whether the capacity of existing gravity sewer system, pump stations and force mains are adequate for new connections? Who does this evaluation?	Currently there are no system in place except for the treatment facility influent and effluent flow meters.	A
3	Do you charge hookup fees for new development and if so, how are they calculated?	The town charges a rehabilitation fee – it is based on the Flow Estimation Table from the MA DEP 314CRM 7.15 stating that each bedroom uses 110 gallons a day. The cost per equal dwelling unit (normally a bedroom) is $500.00. The Flow Estimate Table is used to calculate a equal dwelling unit for places like a restaurant. Each seat in a restaurant uses X gallons per day – for each 110 gallons a day we charge $500.00	
4	Do you have a hydraulic model of your collection system? Is it used to predict the effects of system remediation and new connections?	No.	A

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IV.F. Collection System Operation: Pump Stations - Inspection

IV F	Question	Response	*Act
1	How many pump stations are in the system? How often are pump stations inspected? How many are privately owned, and how are they inspected? Do you use an inspection checklist?	7 major pump stations and over two hundred grinder pumps, of which about 175 are owned by the town. See section I.2 for more details.	
2	Is there sufficient redundancy of equipment at all pump stations?	Currently no	A
3	How are pump stations monitored? If a SCADA system is used, what parameters are monitored?	Pump stations are monitored using SCADA. Flow, power status and communication are monitored. System is old and unreliable, needs to be upgraded to current technology.	A
4	How many pump station/force main failures have you had in each of the last three years? Who responds to pump station/force main failures and overflows? How are the responders notified?	Two – PS 4 and PS 3 See ERP for response plan	
5	How many pump stations are equipped with backup power sources? How many require portable generators? How many portable generators does your system own? Explain how the portable generators will be deployed during a system-wide electrical outage.	See section I.2. The portable generator for PS A is kept at the wastewater plant and deployed when needed.	
6	Are operation logs maintained for all pump stations? Are the lead, lag, and backup pumps rotated regularly?	Pump station checks are logged in DoForms daily. Pumps are typically running in alternating control mode.	
7	Is there a procedure to modify pump operations (manually, or automatically), during wet weather to increase in-line storage of wet weather flows? If so, describe.	NO … possible plan to be evaluated as part of the CMOM Corrective Action Plan	A

V.A. Equipment and Collection System Maintenance: Sewer Cleaning

V A	Question	Response	*Act
1	What is your schedule for cleaning sewer lines on a system-wide basis? At this frequency, how long will it take to clean the system? How are sewer cleaning efforts documented?	Contract has a quota of 20 % per year, actual is less based on priority needs. To be reevaluated as part of the CMOM Corrective Action Plan. Plan is to utilize PACP guidelines and reporting.	A
2	How many linear miles of the collection system were cleaned in each of the past 3 calendar years?	2013 – Approx. 1 mile 2014 – approx. 9.9 Miles inspected, and cleaned as needed 2015 – less than 0.5 miles	A
3	How do you identify sewer line segments that have chronic problems and should be cleaned more frequently? Is a list of these areas maintained and cleaning frequencies established?	Kleinfelder December 16 2014 Kleinfelder June 17 2016 To be reevaluated as part of the CMOM Corrective Action Plan.	A
4	Approximately, how many collection system blockages have occurred during the last calendar year, and what were the causes?	27 Reported blockages since W&C took over in May of 2015 until Oct. 2016	A
5	Has the number of blockages	The number of blockages has stayed about the same.	

* Put an “A” in the final column if this is an issue you intend to address with future action.

	increased, decreased, or stayed the same over the past five years?		
6	What equipment is available to clean sewers? Is any type of cleaning contracted to other parties? If yes, under what circumstances?	SL Rat – inspection device Contractors are used f for sewer cleaning, both for regular basis and emergency service.	A
7	Do you have a root control program? Describe its critical components.	There is currently no root control program.	

V.B. Equipment and Collection System Maintenance: Maintenance Right-of-Way

V B	Question	Response	*Act
1	Is scheduled maintenance performed on Rights-of-Way and Easements? At what frequency? How many manholes in easement areas cannot be located?	Within the last calendar year, there has been no scheduled maintenance within Rights-of-Ways/Easements.	A
2	Are road paving projects coordinated with the collection system operators? Have manholes been paved over? How many manholes in paved areas cannot be located? Describe any systems in place for locating and raising manholes that have been paved over.	Yes, road paving projects are typically coordinated with the Contract Operator through the Department of Public Works. There have been no known manholes paved over nor are there any known manholes in paved areas which cannot be accessed.	

V.C. Equipment and Collection System Maintenance: Parts Inventory

V C	Question	Response	*Act
1	Do you have a central location for the storage of spare parts?	Spare parts are located in the Wastewater plant	
2	How have critical spare parts been identified?	Not at this time	**A**
3	How to you determine if adequate supplies on hand? Has an inventory tracking system been implemented?	Inventories of spare parts are kept on Excel logs, which can help with ordering supplies. A formal inventory tracking system has not been implemented.	**A**

* Put an “A” in the final column if this is an issue you intend to address with future action.

VI A. SSES: System Assessment

VI A	Question	Response	*Act
1	Do POTW flow records or prior I/I or SSES programs indicate the presence of public/private inflow sources or sump pumps? Please Explain.	YES Plant historical flow data and prior system assessments indicated public and private I/I	
2	If problems are related to I/I, has a Sewer System Evaluation Survey (SSES) been conducted? When? What is the status of the recommendations?	Various studies have been done over the years 1974 study by Whitman & Howard 1983 Evaluation by Black 7 Veatch 1984 study by CDM 1999 Summary study by Tighe & Bond 2005 Straights Pond area study by W&C Proposed SSES will be part of the CMOM Corrective Action Plan.	A
3	Do you have a program to identify and eliminate sources of I/I into the system including private service laterals and illegal connections? If so, describe.	No. CMOM Corrective Action Plan will address the future I/I program to meet permit and MA DEP requirements.	A
4	Have private residences been inspected for sump pumps and roof leader connections?	Programs to identify and remove sump pumps was performed several times in the past.	
5	Are inspections to identify illicit connections conducted during the property transfer process?	Yes. Currently inspections to identify sump pumps is covered by the Town bylaw that when a property is transferring ownership, that an inspection is done.	
6	How many sump pumps and roof leaders have been identified? How many have been removed?	The sump pump inspection bylaw was passed in May 2007. Approximately 7 or 8 have been redirected. (Realtors know that the sump pumps need to be directed outside so they make sure that they are directed outside before we come to inspect them – similar to they change the smoke detectors before the fire department comes to inspect.)	
7	Have follow-up homeowner inspections been conducted?	Follow up inspections were done for the five or six we found.	
8	What incentive programs exist to encourage residences to disconnect roof leaders & sump pumps? (i.e. matching funds, etc.)	No current incentive program	
9	What disincentive programs exist to encourage residences to disconnect roof leaders & sump pumps? (i.e. fines, surcharges)	A fine of $25.00 per day for each day in violation can be imposed – So far when we have found an illegal sump pump, they fix it the same day so they can sell the property.	

VI.B. SSES: Manhole Inspection

VI B	Question	Response	*Act
1	Do you have a manhole inspection and assessment program?	Manholes are currently inspected as needed based on preventative maintenance capacities. The PACP type 1 assessment using a standard inspection form is currently used. A manhole repair program is needed.	A

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2	Has a formal manhole inspection checklist been developed?	Yes, a formal manhole inspection checklist has been developed in accordance with NASSCO standards.	
3	How many manholes were inspected during the past calendar year?	277 manholes were inspected between May 1, 2015 and September 30, 2016.	

VII. Energy Use

VII	Question	Response	*Act
1	What is your annual energy cost for operating your system? For which pieces of equipment do you track energy use?	The approximate annual energy cost for the wastewater treatment plant is $233,000. Individual pieces of equipment are not tracked for energy usage, but the wastewater plant and the collection system pump stations have individual meters.	
2	Have you upgraded any of your pumps and motors to more energy efficient models? If so, please describe.	The aeration blower system was upgraded in 2002, replacing the mechanical aerators for ½ of the wastewater plant. Several of the pump stations have been retrofitted with VFDs and when motors are replaced, more energy efficient motors meeting current energy efficiency standards are installed.	
3	Have you performed an energy audit in the past three years?	No. An energy audit has not been performed within the last three years.	
4	Where do you use the most energy (fuel, electricity) in operating your collection system?	For the collection system, the highest energy use is the pump stations pump motors and the individual grinders in each household located on the low pressure sewer. We also recently installed wet well aeration units to reduce FOG and ragging issues.	
5	If you have a treatment plant, would you be interested in participating in EnergyStar benchmarking of your treatment plant?	Yes. The Plant would like to be included for participating in an Energy Star benchmarking.	**A**

VIII. Other Actions

VIII	Question	Response	*Act
1	Describe any other actions that you plan to take to improve your CMOM Program that are not discussed above.	The Town of Hull and its utility stakeholders have recently completed a draft EPA Climate Resiliency Evaluation and Awareness Tool (CREAT) Report which assessed climate change threats to utility assets and will be a helpful tool moving forward for capital planning. The report is under comment and review phase, but pursuit of hazard mitigation grants (including overall collection system improvements for resiliency) will aid in the execution of the CMOM program and its objectives.	**A**

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